Attachment B

GOVERNMENT OF THE DISTRICT OF COLUMBIA

DEPARTMENT OF GENERAL SERVICES

CAPITAL CONSTRUCTION SERVICES ADMINISTRATION

SPECIFICATIONS

SOLICITATION NO. DCAM-13-CS-0108

PROJECT NAME: **WARD 1 SENIOR WELLNESS CENTER SYSTEMIC UPGRADES**

LOCATION: **3531 Georgia Avenue NW**
Washington, D.C. 20010

SECTION 01100 - SUMMARY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

B. Documents referred to in Section B of the BID DOCUMENTS are part hereof the same as if repeated herein.

1.2 SUMMARY

A. This Section includes the following:

1. Work covered by the Contract Documents.
2. Type of the Contract.
3. Work phases.
4. Work under other contracts.
5. Products ordered in advance.
6. Owner-furnished products.
7. Use of premises.
8. Owner's occupancy requirements.
9. Work restrictions.
10. Specification formats and conventions.

1.3 WORK COVERED BY CONTRACT DOCUMENTS

A. Project Identification:WARD 1 SENIOR WELLNESS CENTER SYSTEMATIC UPGRADES. Contract No.: DCAM-13-CS-0108

1. Project Location: 3531 Georgia Avenue, NW Washington, DC 20010

B. Owner:District of Columbia Office on Aging

1. Owner's Representative: Mr. Dave Antoine, Project Manager

C. Architect: Lance Bailey & Associares, Inc.; 7600 Georgia Avenue NW, Washington, DC 20012.

D. Contractor: TBD

E. Work covered by contract documents:

1. This project consists of upgrades to various elements at the interior and exterior of the building. These upgrades include:

- Demolition and new construction as required for new sewage collection and ejection system at Basement Mechanical Room.
- New hose bibb at planter area adjacent to Georgia Avenue.
- Exterior light fixture upgrade at face of building near west side entry drive.
- New security screens at windows along Georgia Avenue.

1.4 TYPE OF CONTRACT

A. Project will be constructed under a single prime contract.

1.5 WORK PHASES

A. The Work shall be conducted in one phase.

1.6 OWNER'S OCCUPANCY REQUIREMENTS

A. Owner Occupancy of Completed Areas of Construction: Owner reserves the right to occupy and use all areas and aspects of the building except those specific to the work herein described provided such occupancy does not interfere with completion of the Work.

1.7 WORK RESTRICTIONS

A. On-Site Work Hours: Work shall be generally performed during normal business working hours of 7:00 a.m. to 5:00 p.m., Monday through Friday, except otherwise indicated.
   1. Weekend Hours: Upon authorization by DGS Project Manager.
   2. Early Morning Hours: Upon authorization by DGS Project Manager.

1.8 COORDINATION

A. Prior to ordering any material, provide Coordination Plan showing intended location of all structure, all equipment, all fixtures and all utility routing. Purpose of Coordination Plan is to assure that all items will fit within existing spaces, equipment, etc. Adjust/Increase lengths of utility runs or adjust location/configuration of equipment, fixtures, etc. as necessary to maintain access to and function of existing and proposed equipment and building features. Bids should consider necessary coordination and said adjustments. Notify Architect of conflicts during bidding. Contractor shall be responsible for all coordination, materials and labor required to resolve conflicts not shown in Coordination Plan.

B. Coordination of Sub-Contractors: During construction, coordinate all work of all sub-contractors, including (but not limited to) scheduling, deliveries, installation and clean-up. At Bid phase,

confirm that each sub-contractor understands all aspects of his work and work related to his work. If sub-contractor is unclear, seek clarity from Architect prior to bidding. If any work remains unclear, or a potential conflict exists between two sub-contractors, each sub-contractor shall bid according to worse case scenario, meaning each bidder to treat his bid as if he will bear the weight of the solution. Example: An existing 8'x8' masonry opening is to be made smaller by infilling with wood blocking/trim and then a window installed, but it is unclear if the finished window is to be 4'x4' or 6'x6'. The woodwork sub-contractor should base his bid on a window size of 4'x4' (more wood infill/trim required) and the window sub-contractor should base his bid on a window size of 6'x6' (more window required). Therefore, when clarification is provided no additional cost will be charged to the project.

1.9 PERMITS

A. Contractor shall apply for, pay for, and obtain all necessary permits associated with this Work.

1.10 SUBMITTALS - Applicable for all fixtures, equipment and hardware that is to be installed under this contract, unless otherwise noted.

A. Product Data: Include construction details, material descriptions, fabrication methods, dimensions of individual components and profiles, hardware, finishes, and (where applicable) operating instructions

B. Samples for Security Screens only:

1. Security Screen Fabrication: 12--by-12-inch- (300--by-300-mm-) long, full-size screen corner including full-size sections of screen frame with factory-applied color finish, weather stripping, and mesh.
2. Hardware: Full-size units with factory-applied finish.

C. Maintenance Data for Sewage Ejector: Maintenance manual.

D. Warranty: Manufacturer's Standard Warranty.

1.11 QUALITY ASSURANCE

A. Installer Qualifications: An installer acceptable to product manufacturer for installation of units required for this Project.

B. Manufacturer Qualifications: A manufacturer capable of fabricating units that meet or exceed performance requirements indicated in the Basis-of-Design.

C. Source Limitations: Obtain products through one source from a single manufacturer.

D. Product Options: Basis-of-Design establishes requirements for products aesthetic effects and performance characteristics. Aesthetic effects are indicated by dimensions, arrangements, alignment, and profiles of components and assemblies as they relate to its intended

installation, to one another, and to adjoining construction. Performance characteristics are indicated by criteria subject to verification by one or more methods including preconstruction testing, field testing, and in-service performance.

E. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination."

1.12 PROJECT CONDITIONS

A. Field Measurements: Verify existing conditions and required dimensions by field measurements before fabrication.

1.11 PERMITS

A. Contractor shall apply for, pay for, and obtain all necessary permits associated with this Work.

PART 2 - PRODUCTS

2.1 PRODUCTS

A. Basis-of-Design: See Drawings for Basis-of-Design of all required products. Bidders are to bid according to these products and provide units that match the salient characteristics of each.

B. Other manufacturer's products of equal or better quality will be considered in conformance with specification requirements. Architect approved equals are subject to all specification requirements.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine openings, substrates, structural support, anchorage, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of work. Verify dimensions and levelness of surrounding surfaces. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Comply with Product Data and manufacturer's written instructions for installing units and associated components.
B. Install units level, plumb, square, true to line, anchored securely in place to structural support, and in proper relation to related components and adjacent construction.

3.3 ADJUSTING, CLEANING, AND PROTECTION

A. Adjust operating components (where occurs), hardware, and accessories for a tight fit at contact points and for smooth operation. Lubricate hardware and moving parts (where applies) according to manufacturer's instructions.

B. Clean units immediately after installing windows. Comply with manufacturer's written recommendations for final cleaning and maintenance. Remove excess, dirt, and other substances. Remove nonpermanent labels, and clean surfaces.

C. Remove and replace any item that has been broken, chipped, cracked, abraded, or damaged during construction period.

D. Protect units from contact with contaminating substances resulting from construction operations. Assure proper operation/functioning of units are maintained.

END OF SECTION 01100

SECTION 013300 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Special Provisions and other Division 1 Specification Sections, apply to this Section.

B. Documents referred to in Section B of the BID DOCUMENTS are part hereof the same as if repeated herein.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.

1.3 DEFINITIONS

A. Action Submittals: Written and graphic information that requires the Contracting Officer's responsive action.

B. Informational Submittals: Written information that does not require the Contracting Officer's responsive action. Submittals may be rejected for not complying with requirements.

1.4 SUBMITTAL PROCEDURES

A. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.

1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
2. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.

    a. The Contracting Officer has the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

B. Processing Time: Allow enough time for submittal review, including time for resubmittals, as follows. Time for review shall commence on the Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.

1. Initial Review: Allow 15 working days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. The Contracting Officer will advise Contractor when a submittal being processed must be delayed for coordination.
2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
3. Resubmittal Review: Allow 15 working days for review of each resubmittal.
4. Sequential Review: Where sequential review of submittals by the Architect's consultants, Owner, or other parties is indicated, allow 20 working days for initial review of each submittal.

    a. Sequential reviews will be required for electrical and plumbing submittals.

C. Identification: Place a permanent label or title block on each submittal for identification.

1. Indicate name of firm or entity that prepared each submittal on label or title block.
2. Provide a space approximately 6 by 8 inches on label or beside title block to record Contractor's review and approval markings and action taken by the Architect and the Contracting Officer.
3. Include the following information on label for processing and recording action taken:

    a. Project name.
    b. Date.
    c. Name and address of the Contracting Officer and the Architect.
    d. Name and address of Contractor.
    e. Name and address of subcontractor.
    f. Name and address of supplier.
    g. Name of manufacturer.
    h. Submittal number or other unique identifier, including revision identifier.

        1) Submittal number shall use Specification Section number followed by a decimal point and then a sequential number (e.g., 06100.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., 06100.01.A).

    i. Number and title of appropriate Specification Section.
    j. Drawing number and detail references, as appropriate.
    k. Location(s) where product is to be installed, as appropriate.
    l. Other necessary identification.

D. Deviations: Highlight, encircle, or otherwise specifically identify deviations from the Contract Documents on submittals.

E. Additional Copies: Unless additional copies are required for final submittal, and unless the Contracting Officer observes noncompliance with provisions in the Contract Documents, initial submittal may serve as final submittal.

1. Submit one copy of submittal to concurrent reviewer in addition to specified number of copies to the Architect.
2. Additional copies submitted for maintenance manuals will be marked with action taken and will be returned.

F. Transmittal: Package each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. The submittals shall be transmitted through the Architect to the Contracting Officer. The Contracting Officer will either return submittals, without review or discard submittals received from sources other than Contractor.
1. Transmittal Form: Provide locations on form for the following information:

a. Project name.
b. Date.
c. Destination (To:).
d. Source (From:).
e. Names of subcontractor, manufacturer, and supplier.
f. Category and type of submittal.
g. Submittal purpose and description.
h. Drawing number and detail references, as appropriate.
i. Transmittal number, numbered consecutively.
j. Submittal and transmittal distribution record.
k. Remarks.
l. Signature of transmitter.

2. On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by the Contracting Officer on previous submittals, and deviations from requirements in the Contract Documents, including minor variations and limitations. Include same label information as related submittal.

G. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.

1. Note date and content of previous submittal.
2. Note date and content of revision in label or title block and clearly indicate extent of revision.
3. Resubmit submittals until they are marked "APPROVED", "APPROVED AS NOTED WORK MAY PROCEED", "NO EXCEPTIONS TAKEN" OR "FURNISH AS NOTED".

H. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.

I. Use for Construction: Use only final submittals with mark indicating "No Exceptions Taken" or "Furnish as Noted" by The Contract Officer.

PART 2 - PRODUCTS

2.1 ACTION SUBMITTALS

A. General: Prepare and submit Action Submittals required by individual Specification Sections.

B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.

1. If information must be specially prepared for submittal because standard printed data are not suitable for use, submit as Shop Drawings, not as Product Data.
2. Mark each copy of each submittal to show which products and options are applicable.
3. Include the following information, as applicable:

    a. Manufacturer's written recommendations.
    b. Manufacturer's product specifications.
    c. Manufacturer's installation instructions.
    d. Standard color charts.
    e. Manufacturer's catalog cuts.
    f. Wiring diagrams showing factory-installed wiring.
    g. Printed performance curves.
    h. Operational range diagrams.
    i. Mill reports.
    j. Standard product operation and maintenance manuals.
    k. Compliance with specified referenced standards.
    l. Testing by recognized testing agency.
    m. Application of testing agency labels and seals.
    n. Notation of coordination requirements.

4. Submit Product Data before or concurrent with Samples.
5. Number of Copies: Submit six (6) copies of Product Data, unless otherwise indicated. The Contracting Officer will return two (2) copies. Mark up and retain one (1) returned copy as a Project Record Document.

C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on Architect's CAD Drawings or reproductions of the Contract Documents.

1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:

    a. Dimensions.
    b. Identification of products.
    c. Fabrication and installation drawings.
    d. Roughing-in and setting diagrams.
    e. Wiring diagrams showing field-installed wiring, including power, signal, and control wiring.
    f. Shopwork manufacturing instructions.
    g. Templates and patterns.
    h. Schedules.
    i. Design calculations.

j. Compliance with specified standards.
k. Notation of coordination requirements.
l. Notation of dimensions established by field measurement.
m. Relationship to adjoining construction clearly indicated.
n. Wiring Diagrams: Differentiate between manufacturer-installed and field-installed wiring.

2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches but no larger than 11 by 17 inches.
3. Number of Copies: Submit six (6) opaque copies of each submittal, unless copies are required for operation and maintenance manuals. Submit seven (7) copies where copies are required for operation and maintenance manuals. The Contract Officer will retain four (4) copies; remainder will be returned. Mark up and retain one (1) returned copy as a Project Record Drawing. If additional copies are required for subcontractors provide the additional copies needed over the required six (6) copies.

D. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.

1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.

2. Identification: Attach label on unexposed side of Samples that includes the following:

a. Generic description of Sample.
b. Product name and name of manufacturer.
c. Sample source.
d. Number and title of appropriate Specification Section.

3. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.

4. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.

a. Number of Samples: Submit three (3) sets of Samples. The Contracting Officer will retain one (1) Sample sets;

remainder will be returned. Mark up and retain one returned Sample set as a Project Record Sample.

1) Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
2) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three (3) sets of paired units that show approximate limits of variations.

PART 3 - EXECUTION

3.1 CONTRACTOR'S REVIEW

A. Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to the Contracting Officer.

B. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

C. Contractor shall forward submittal to Architect and one copy to Contract Officer.

3.2 THE ARCHITECT'S ACTION

A. General: The Architect will not review submittals that do not bear Contractor's approval stamp and will return them without action.

B. Action Submittals: The Architect will review each submittal, make marks to indicate corrections or modifications required. The Architect will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action taken, such as:

1. NO EXCEPTIONS TAKEN

2. FURNISH AS NOTED

3. REVISE AND RESUBMIT

4. REJECTED

5. ACTION NOT TAKEN

C. Architect shall return submittals to Contractor and copy to Contract Officer. Contract Officer has the right to modify final direction to

Contractor. If Contract Office does not act on the right within 5 days, returned submittal will stand as-is.

D. Partial submittals are not acceptable, will be considered non-responsive, and will be returned without review.

E. Submittals not required by the Contract Documents may not be reviewed and may be discarded.

END OF SECTION 013300

SECTION 01700 - EXECUTION REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Special Provisions and other Division 1 Specification Sections, apply to this Section.

B. Documents referred to in **Section C** of the BID DOCUMENTS are part hereof the same as if repeated herein.

1.2 SUMMARY

A. This Section includes general procedural requirements governing execution of the Work including, but not limited to, the following:
   1. General installation of products.
   2. Progress cleaning.
   3. Starting and adjusting.
   4. Protection of installed construction.
   5. Correction of the Work.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

A. Existing Conditions: The existence and location of utilities, and other construction indicated as existing are not guaranteed. Before beginning work, investigate and verify the existence and location of mechanical, plumbing and electrical systems and other construction affecting the Work.

   1. Before construction, verify the location and points of connection of utility services.

B. Existing Utilities: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning work, investigate and verify the existence and location of underground utilities and other construction affecting the Work.

   1. Before construction, verify the location and invert elevation at points of connection of storm sewer, and water-service piping.

C. Acceptance of Conditions: Examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.

1. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:

   a. Description of the Work.
   b. List of detrimental conditions, including substrates.
   c. List of unacceptable installation tolerances.
   d. Recommended corrections.

2. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
3. Examine roughing-in for mechanical, plumbing and electrical systems to verify actual locations of connections before equipment and fixture installation.
4. Examine walls and floors for suitable conditions where products and systems are to be installed.
5. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

B. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.

C. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents, submit a request for information to Contracting Officer. Include a detailed description of problem encountered, together with recommendations for changing the Contract Documents.

3.3 INSTALLATION

A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation.

1. Make vertical work plumb and make horizontal work level.
2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
3. Conceal pipes, ducts, and wiring in finished areas, unless otherwise indicated.

B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.

C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.

D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.

E. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.

F. Anchors and Fasteners: Provide anchors and fasteners as required to anchor each component securely in place, accurately located and aligned with other portions of the Work.

1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Contracting Officer.
2. Allow for building movement, including thermal expansion and contraction.
3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

3.4 PROGRESS CLEANING

A. General: Clean Project site and work areas daily, including common areas. Coordinate progress cleaning for joint-use areas where more than one installer has worked. Enforce requirements strictly. Dispose of materials lawfully.

1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
2. Do not hold materials more than 7 days during normal weather.

B. Site: Maintain Project site free of waste materials and debris.

C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.

1. Remove liquid spills promptly.
2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.

D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.

E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.

F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

G. Waste Disposal: Burying or burning waste materials on-site will not be permitted. Washing waste materials down sewers or into waterways will not be permitted.

H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.

I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.

J. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.5 STARTING AND ADJUSTING

A. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.

B. Adjust operating components for proper operation without binding. Adjust equipment for proper operation.

C. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

3.6 PROTECTION OF INSTALLED CONSTRUCTION

A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.

B. Comply with manufacturer's written instructions for temperature and relative humidity.

3.7 CORRECTION OF THE WORK

A. Repair or remove and replace defective construction. Restore damaged substrates and finishes. Comply with requirements in Division 1 Section "Cutting and Patching."

1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.

B. Restore permanent facilities used during construction to their specified condition.

C. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.

D. Repair components that do not operate properly. Remove and replace operating components that cannot be repaired.

END OF SECTION

SECTION 01731 - CUTTING AND PATCHING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Special Provisions and other Division 1 Specification Sections, apply to this Section.

B. Documents referred to in **Section C** of the BID DOCUMENTS are part hereof the same as if repeated herein.

1.2 SUMMARY

A. This Section includes procedural requirements for cutting and patching.

B. Related Sections include the following:

1. Division 1 Section "Selective Demolition" for demolition of selected portions of the building.

1.3 DEFINITIONS

A. Cutting: Removal of in-place construction necessary to permit installation or performance of other Work.

B. Patching: Fitting and repair work required to restore surfaces to original conditions after installation of other Work.

1.4 SUBMITTALS

A. Cutting and Patching Proposal: Submit a proposal describing procedures at least ten (10) days before the time cutting and patching will be performed, requesting approval to proceed. Include the following information:

1. Extent: Describe cutting and patching, show how they will be performed, and indicate why they cannot be avoided.
2. Changes to In-Place Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in building's appearance and other significant visual elements.
3. Products: List products to be used and firms or entities that will perform the Work.
4. Dates: Indicate when cutting and patching will be performed.
5. Utility Services and Mechanical/Electrical Systems: List services/systems that cutting and patching procedures will disturb or affect. List services/systems that will be relocated and those that will be temporarily out of service. Indicate how long services/systems will be disrupted.

6. Structural Elements: Where cutting and patching involve adding reinforcement to structural elements, submit details and engineering calculations showing integration of reinforcement with original structure.
7. The Contracting Officer's Approval: Obtain approval of cutting and patching proposal before cutting and patching. Approval does not waive right to later require removal and replacement of unsatisfactory work.

1.5 QUALITY ASSURANCE

A. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety. Operating elements include the following:
   1. Mechanical systems piping and ducts.
   2. Plumbing Systems.

B. Cutting and Patching Conference: Before proceeding, meet at Project site with parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

1.6 WARRANTY

A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during cutting and patching operations, by methods and with materials so as not to void existing or new warranties.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General: Comply with requirements specified in other Sections.

B. In-Place Materials: Use materials identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.

   1. If identical materials are unavailable or cannot be used, use materials that, when installed, will match the visual and functional performance of in-place materials.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed.

1. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with in-place finishes or primers.
2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Temporary Support: Provide temporary support of Work to be cut.

B. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.

C. Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.

D. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to prevent interruption to occupied areas.

3.3 PERFORMANCE

A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.

1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.

B. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.

1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
4. Excavating and Backfilling: Comply with requirements in applicable Division 2 Sections where required by cutting and patching operations.
5. Mechanical and Electrical Services: Cut off pipe or conduit. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
6. Proceed with patching after construction operations requiring cutting are complete.

C. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections.

1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.
2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.

    a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
    b. Restore damaged pipe covering to its original condition.

3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance.

    a. Where patching occurs in a painted surface, apply primer and intermediate paint coats over the patch and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.

4. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition.

D. Cleaning: Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar materials.

END OF SECTION

SECTION 01732 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Special Provisions and other Division 1 Specification Sections, apply to this Section.

B. Documents referred to in **Section C** of the BID DOCUMENTS are part hereof the same as if repeated herein.

1.2 SUMMARY

A. This Section includes the following:

1. Demolition and removal of selected portions of building or structure.

B. Related Sections include the following:
1. Division 1 Section "Cutting and Patching" for cutting and patching procedures.

1.3 DEFINITIONS

A. Remove: Detach items from existing construction and legally dispose of them off-site, unless indicated to be removed and salvaged or removed and reinstalled.

1.4 SUBMITTALS

A. Qualification Data: For refrigerant recovery technician.

B. Schedule of Selective Demolition Activities: Indicate the following:

1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity. Ensure Owner's employees on-site operations are uninterrupted.
2. Interruption of utility services. Indicate how long utility services will be interrupted.
3. Coordination for shutoff, capping, and continuation of utility services.
4. Locations of proposed dust-control temporary partitions/screens to protect areas affected by selective demolition operations.
5. Coordination of Owner's continuing occupancy of portions of existing building.
6. Means of protection for items to remain and items in path of waste removal from building.

C. Pre-demolition Photographs or Videotapes: Show existing conditions of adjoining construction, including finish surfaces, that might be misconstrued as damage caused by selective demolition operations. Comply with Division 1 Section "Photographic Documentation." Submit before Work begins.

1.5 QUALITY ASSURANCE

A. Pre-demolition Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination."

1.6 PROJECT CONDITIONS

A. Owner will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted.

1. Comply with requirements specified in Section C of the contract."

B. Notify the Contracting Officer of unsatisfactory conditions before proceeding with selective demolition.

C. Storage or sale of removed items or materials on-site is not permitted.

D. Utility Service: Maintain existing utilities to remain in service and protect them against damage during selective demolition operations.

1. Maintain fire-protection facilities in service during selective demolition operations.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that utilities have been disconnected and capped.

B. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.

C. Inventory and record the condition of areas surrounding items to be removed.

D. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to the Contracting Officer.

E. Survey of Existing Conditions: Record existing conditions by use of measured drawings, preconstruction photographs, preconstruction videotapes.

1. Comply with requirements specified in Division 1 Section "Photographic Documentation."

3.2 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

A. Existing Services/Systems: Maintain services/systems indicated to remain and protect them against damage during selective demolition operations.

1. Comply with requirements for existing services/systems interruptions specified in Sections C and H of the Contract.

B. Service/System Requirements: Locate, identify, disconnect, and seal or cap off indicated utility services and mechanical/electrical/plumbing systems serving areas to be selectively demolished.

1. Contractor will arrange to shut off indicated services/systems, with approval of the Building Service Manager, upon furnishing the Contracting Officer and Building Service Manager with a 72 hour notice.
2. Arrange to shut off indicated utilities with utility companies.
3. If services/systems are required to be removed, relocated, or abandoned, before proceeding with selective demolition provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.
4. Cap, valve, or plug and seal remaining portion of pipe or conduit after bypassing.

3.3 PREPARATION

A. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used portions of the facility.

3.4 SELECTIVE DEMOLITION, GENERAL

A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:

1. Neatly cut openings and holes plumb, square, and true. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces. Temporarily cover openings to remain.
2. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
3. Do not use cutting torches.
4. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
5. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
6. Dispose of demolished items and materials promptly. Comply with requirements in Division 1 Section "Construction Waste Management."

B. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by the Contracting Officer, items may be removed to

a suitable, protected storage location during selective demolition and cleaned and reinstalled in their original locations after selective demolition operations are complete.

3.5 SELECTIVE DEMOLITION PROCEDURES FOR SPECIFIC MATERIALS

A. Concrete: Demolish in sections. Cut concrete full depth at junctures with construction to remain and at regular intervals, using power-driven saw, then remove concrete between saw cuts.

B. Concrete Slabs-on-Grade: Saw-cut perimeter of area to be demolished, then break up and remove.

3.6 DISPOSAL OF DEMOLISHED MATERIALS

A. General: Remove demolished materials from Project site and legally dispose of them in an EPA-approved landfill.

1. Do not allow demolished materials to accumulate on-site.
2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
3. Comply with requirements specified in Division 1 Section "Construction Waste Management."

B. Disposal: Transport demolished materials off Owner's property and legally dispose of them.

3.7 CLEANING

A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

3.8 SELECTIVE DEMOLITION SCHEDULE

A. Existing Items and Construction to Be Removed: Per contract Drawings.

B. Existing Items to Be Removed and Salvaged:

C. Existing Items to Remain: Per Contract Drawings

END OF SECTION

SECTION 02140 – DEWATERING

PART 1 - GENERAL

1.1 SUMMARY:

A. Documents referred to in **Section C** of the BID DOCUMENTS are part hereof the same as if repeated herein.

B. Description of work: work of this Section includes, but is not limited to, the
   1. All necessary provisions for designing, furnishing, installing, maintaining, operating and removing temporary dewatering systems as required to low and pumped water; constructing, maintaining, observing and, except where indicated or required to remain in place, removing of observation wells, and instrumentation for control of the system.
   2. Dewatering includes lowering the water table which would otherwise emerge from the slopes or bottom of the excavation; increasing the stability of excavated slopes; preventing loss of material from beneath the slopes or bottom of the excavation; improving the excavation and hauling characteristics of sandy soil; and preventing rupture or heaving of the bottom of an excavation.
   3. Instrumentation for control of the dewatering system includes furnishing, installing and operating piezometers as well as reading and logging of water levels in the observation wells.

C. Related Work Specified Elsewhere:
   1. Trench Excavation and Backfill: Section 02220.
   2. Earthwork: Section 02200

1.2 QUALITY ASSURANCE:

A. Codes, regulations, reference standards and specifications.
   1 Codes and regulations of the jurisdictional authorities.
   2. ASTM: C33, D1785, D2466, D2564, D3653.

B. Design a dewatering system, which will:
   1. Effectively reduce the hydrostatic pressure and lower the groundwater levels below excavation;
   2. Develop a substantially dry and stable subgrade for the prosecution of subsequent operations;
   3. Not result in damage to adjacent properties, buildings, structures, utilities and other work; and
   4. Assure that after initial pumping, no soil particles will be present in the discharge.
   5. Discharge from dewatering operation can be disposed of into the existing excess flow conduit.

C. Methods may include sump pumping, single or multiple-stage well point systems, educator and ejector type systems, deep wells, and combinations thereof.

D. Locate dewatering facilities only where they will not interfere with utilities and construction work to be done by others. Locate dewatering wells less than neither 20 nor more than 5 feet from the first observation well.

E. Modify dewatering procedures, which cause, or threaten to cause, damage to new or existing facilities, so as to prevent further damage. The Contractor is responsible for determining the modifications to be made, which shall be at no additional expense to the District.

F. Comply with the requirements of Sediment Control promulgated by the District of Columbia. When water is to be diverted into a storm drain, provide settling basins or other approved apparatus as required to reduce the amount of fine particles that may be carried into the drain. If a storm drain becomes blocked or its capacity restricted due to dewatering operations, make arrangements with the jurisdictional agency and clean the drain at no additional expense to the District.

1.3 SUBMITTALS

A. Submit the following for the approval by the Architect in accordance with section 1330 and with the additional requirements as follows, prior to installation of the system.
1. The proposed type of dewatering system, including relief of hydrostatic head and maintenance of the excavation in a dewatered and in a hydrostatically relieve condition.
2. Arrangement, location and depths of the components of the system.
3. A complete description of equipment to be used, with installation, operation, and maintenance procedures.
4. Standby equipment and power supply.
5. Location and size of berms, dikes, observation wells, sumps and discharge lines, including their relation to water disposal ditches.
6. Types and size of filters.
7. Location, types and depths of well points and piezometers.
8. Design calculations demonstrating adequacy of the selected system and equipment.

1.4 MATERIALS

A. Not used.

1.5 CONSTRUCTION REQUIREMENTS

A. Dewatering:
1. Accomplish dewatering in accordance with approved submittals. Keep the Architect advised of any changes made to accommodate field conditions and, on completion of the dewatering system installation, revise and resubmit submittals.
2. Organize dewatering operations to lower the groundwater level in excavations as required for prosecution of the work, and to provide a stable, dry subgrade for the prosecution of subsequent operations.
3. Maintain the water level at such lower elevations until no danger to the Work can occur because of buildup of excessive hydrostatic pressure, and in any event maintain the water level a minimum of two feet below the subgrade, unless otherwise permitted by the Architect.
4. If approved by the Architect, the extent of dewatering may be reduced, for units designed to withstand uplift pressure, to maintain the water level a minimum of five feet below the prevailing level of backfill as it is being

placed, provided such water level does not result in uplift pressures in excess of 80 percent of the downward pressure produced by the weight of the structure and backfill in place.

B. Observation Wells:

1. Observation wells will be used as primary basis for determining compliance with the dewatering requirements of this section.
2. Install observation wells at the locations, and to the depths, approved by the Architect.
3. Drill holes for observation wells, and case with temporary casing. Use water as the drilling fluid. Make a log of the soils encountered during drilling and deliver it to the Architect.
4. Flush all cased holes with clean water through an approved bit. Flush until the discharge water is free of soil particles.
5. Maintenance of observation wells is the responsibility of the Contractor.
6. Replace damaged or destroyed observation wells within 48 hours, unless otherwise approved by the Architect, at no additional expense to the District.
7. Expose and cut off observation wells within the excavation area as excavation proceeds, but continue to maintain them as specified.
8. Removal of Observation Wells:
   a. Remove observation wells only when so approved by the Architect.
   b. Remove observation wells outside the excavation area to an elevation five feet below finished surface grade. Backfill voids and restore the surface to a condition approved by the Engineer.
   c. Remove observation wells inside the excavation area to the subgrade and seal the hole with grout.

C. Records:

1. Observe and record the average flow rate and time of operation of each pump used in the dewatering system. Where necessary provide appropriate devices, such as flow meters, for observing the flow rates. Submit the data, during the period that the dewatering system is in operation.
2. Observe and record the elevation of groundwater during the period that the dewatering system is in operation. Submit observation records within 24 hours of reading, on a bi-weekly basis.
3. During initial period of the dewatering, make required observations on a daily basis. If, after a period, dewatering operations have stabilized, reduce observations to bi-weekly intervals.

END OF SECTION

SECTION 02220 - TRENCH EXCAVATION AND BACKFILL

PART 1 - GENERAL

1.1 SUMMARY:

A. Documents referred to in **Section C** of the BID DOCUMENTS are part hereof the same as if repeated herein.

B. Description of Work: Work of this Section includes, but is not limited to, the following:

1. Excavation, supporting utilities and backfilling as required in open trenches to specified widths and depths for the construction of pipe sewer and water main systems, including disposal of unsuitable and excess materials.

1.2 SUBMITTALS

A. Soil samples shall be submitted for trench backfill, soils base, borrow trench fill, and subgrade gravel per Subsection 02220.1.5.

1.4 MATERIALS

A. General:

1. All trench backfill shall meet requirements of this subsection.
2. Stone or graded aggregate gravel supplied from a quarry producing aggregates of asbestos bearing content or having asbestos present at the quarry is prohibited.

B. Trench Backfill:

1. Material used in trench backfill shall be a well graded soil-aggregate mixture with ten percent maximum, by weight, passing the No. 200 sieve. The soil shall have a liquid limit not greater than 40 and a maximum plasticity index of 10, both per ASTM D4318.
2. Within one foot of the pipe, no gravel or stone shall be larger than 1-1/2 inches in any dimension.
3. For remainder of trench, no gravel or stone shall be larger than 4 inches in any dimension, and not larger than one inch within one foot of finish grade.
4. Backfill shall be free from snow, ice, frozen materials, trash, brick, clay lumps, broken concrete, tree roots, sod, cinders, glass, plaster, organic matter and any other foreign matter.
5. Backfill shall have a minimum dry weight density of 100 pounds per cubic foot.
6. Backfill shall have a uniform moisture content suitable for compaction to the specified density. The Contractor shall moisten or dry soils materials to obtain a suitable, uniform moisture content. If the materials are of such nature that heaving, pumping, rutting, or shearing occurs in the compacted backfill under the action of construction equipment, even though soil meets density requirements, affected material shall be replaced to limits as directed.

C. Trench Subgrade Gravel: Gravel to backfill trench undercut areas shall be per ASTM C33, Grading Size No. 57.

D. Soils Base: Soils base course material shall consist of either Bank Run Gravel Base or Crushed Stone Base and have a minimum CBR of 25 in accordance with AASHTO T193.

1. Bank Run Gravel Base:
   a. Coarse aggregate retained on the No. 10 sieve shall consist of hard, durable particles or fragments of stone, gravel or slag; materials that break up when subjected to freeze-thaw or wetting-drying action are prohibited. Coarse aggregate shall have a maximum percentage of wear of 50 per the Los Angeles test.
   b. Fine aggregate passing the No. 10 sieve shall consist of natural and crushed sand and finer mineral particles. The fraction passing the No. 200 sieve shall not exceed one-third (1/3) of the fraction passing the No. 40 sieve. The fraction passing the No. 40 sieve shall have a maximum liquid limit of 25 and a maximum plasticity index of 6. The composite material shall conform to the following gradation requirements:

Sieve Designation	Percent Passing By Weight
2-in.	100
1-in.	70-100
3/4-in.	60-95
No. 4	40-75
No. 10	25-65
No. 40	10-45
No. 200	2-10

2. Crushed Stone Base:
   a. Crushed aggregate shall consist of crushed stone having hard, strong, durable particles per applicable requirements of ASTM D2940.
   b. Additional fine aggregate shall consist of material of the same type and quality as specified above for coarse aggregate.
   c. Use of soil fines or natural sands is prohibited.
   d. The coarse aggregate and additional fine aggregate shall be so proportioned as to produce a final mixture meeting the following gradation requirements:

Sieve Designation	Percent Passing by Weight	Job Mix Tolerance Weight Percent Passing
2 inch	100	-2
1-1/2 inch	95-100	±5
3/4 inch	70-92	±8
3/8 inch	50-70	±8
No. 4	35-55	±8
No. 30	12-25	±5
No. 200	0-8	±3

1.5 SAMPLING/TESTS

A. Soil samples of excavated trench material shall be taken by the Contractor and shall be free from snow, ice, frozen materials, trash, brick, clay lumps, broken concrete, tree roots, sod, glass, plaster, organic matter and other foreign matter. Brick and broken concrete is permitted if crushed to meet recycle concrete specifications of Government of The District Columbia, Department of Public Works specifications.

B. The Contractor will have soils analysis tests made on excavated trench material and a report made, prior to use of excavated material as backfill. A minimum of one soils analysis will be made for each 500 feet of trench.

C. The Contractor also shall submit samples of trench borrow fill material, subgrade gravel and soils base to the Architect for testing by the Owner.

D. The Contractor will prepare samples per AASHTO T87, perform sieve analysis per AASHTO T27 and T88, determine percentage of wear per AASHTO T96, determine liquid limit per AASHTO T89 and determine the plasticity index per AASHTO T90.

1.6 TRENCH EXCAVATION

A. General:

1. Trench excavation shall include removal of all materials and objects of whatever nature encountered in excavation, excluding rock.
2. When trenching through lawn, park or other tillable areas, sod and topsoil shall be removed with care as directed and salvaged if suitable for reuse in restoring disturbed surfaces.
3. All excavation within trench limits shall be classified as trench excavation unless otherwise stated in the Contract.
4. Surface materials of whatever nature shall be removed, including pavement, and topsoil within trench limits. The Contractor shall properly separate and store materials the Architect deems suitable for use in backfilling or restoring original conditions.
5. When approaching existing underground construction which may be in proximity to sewer grades, or approaching existing sewers or water mains for connections, the trench shall be opened a sufficient distance ahead of the work, test pits made, or other approved exploratory methods employed to allow for authorized changes in line and grade. Changes in line and grade plus excavation and pipe removal caused by failure to take such precautions shall be made at no additional cost to the Government.
6. The Contractor shall adequately support underground pipes or conduits exposed as a result of excavations; adequate support shall be provided along their entire exposed length by using timber or steel in such manner that backfilling may be performed without dislodging such pipes or conduits. No additional payment will be made for support material left in place nor for installing and maintaining supports.
7. Trench bottom shall be excavated approximately flat and square with trench walls. When material at trench grade elevation is suitable, trench bottom shall be protected and maintained free from standing water; if not maintained, extra excavation and disposal, furnishing and placing undercut gravel to trench grade elevation shall be at no expense to the Owner.
8. If material found at trench grade is unsuitable for a foundation for pipe bedding, it shall be removed by the Contractor to such depth and width as may be directed per subsection 02220.1.9.
9. All suitable trench excavation material meeting subsection 02220.1.4.B. requirements shall be stockpiled either on-site or off-site as available space will permit, protected, and maintained. Excavated materials shall be neither deposited nor stockpiled so as to endanger in any manner the project, new or existing structures or utilities, nor interfere with project construction sequence and work by others.
10. The Contractor shall remove and dispose of all excess and unsuitable materials, and shall furnish his own disposal areas. The Contractor must use sealed trucks or containers when hauling wet materials. The Contractor must obtain written permission from Owner or Operator of disposal areas before disposing of waste material or surplus debris.

B. Cuts Through Paving and Sidewalk:

1. Any pavement, sidewalk, other structure which may be marred, altered, damaged, or destroyed by the Contractor (due, but not limited, to his methods of construction, mobility of equipment, and handling and storage of materials) will be replaced by the Contractor with standard type of new pavement, sidewalk, or other structure. If the damage occurs within District of Columbia's Public Space the replacement will be by the District of Columbia at the Contractors expense.

C. Trench Width Design:

1. Trench width may be less than, but shall not exceed, trench width for the trench section from trench subgrade to a point one foot above top of pipe.
2. At the Contractor's option, actual trench width more than one foot above the top of the pipe may exceed trench width if conditions will permit and are approved.

D. Dewatering:

1. See section 02140 Dewatering for information regarding dewatering.

E. Temporary Plating Over Trenches:

1. To maintain traffic and safety, steel plates or wood planking shall be used to temporarily bridge trench excavations, at no cost to the Owner. Plates/planks shall be of size and positioned to provide adequate bearing at plate/plank edges, shall be securely anchored. Plates shall be of sufficient thickness to safely carry pedestrian loads without detrimental deflection.

1.7 TRENCH BACKFILL

A. General:

1. When pipes, connections and bedding are complete and approved, trenches shall be backfilled. Excavated materials meeting requirements of Subsection 02220.1.4 shall be used as shown on applicable details.
2. All soil materials removed from trench excavations that fall within the Unified Soil Classification System type ML, CL, OL, MH, CH, OH, PT, as well as material containing organic matter, refuse, frozen or other unsuitable materials are prohibited for use as backfill and shall be removed from the site.
3. When the required quantity of trench backfill exceeds quantity of approved on-site material per subsection 02220.1.4B, Borrow Trench Fill per subsection 02220.1.9 shall be used. Borrow Soils Base shall be used in that portion of the trench projecting through soils base layer.

B. Density Requirements:

1. Standard Density requirements for soils, graded stone and recycled materials are defined as the Maximum Dry (Laboratory) Density obtained by AASHTO T180, Method D. The in-

place or required density shall be determined per AASHTO T191, or nuclear methods AASHTO T238 and T239, and is expressed as a percentage of the Standard Density.

2. If the in-place density sample contains material larger than three-fourths (3/4) inch, the field density shall be adjusted for the material retained on the three-fourths (3/4) inch eve before direct comparison with the Standard Density.
3. The minimum in-place density for trench fill in road-bed areas shall be as specified in Table 02220-1.

TABLE 02220-1 DENSITY REQUIREMENTS

Description	Min. Density Required % of Max. Dry Density
Trench Backfill, and Backfill for Pipe Sewers and Undercut Areas	93 percent for each layer up to six inches below roadway subgrade. 95 percent for top six inch layer below roadway subgrade.
Trench Backfill for D.I. Pipe Water Mains - Laying Condition Type 2A	70 percent between trench bottom and 12 inches over top of pipe. 93 percent for each layer above the 12-inch layer over top of pipe, up to six inches below roadway subgrade. 95 percent for top six inch layer below roadway subgrade.
Soils Base Course (New and Existing)	95 percent for Portland cement concrete roadway and sidewalk areas. 100 percent for bituminous concrete roadway areas.

C. Construction Requirements:

1. Trench fill material shall be dumped outside the trench excavation and not end-dumped directly into trench. Fill shall be placed in uniform horizontal layers of not more than 8 inches loose depth and for full trench width. Any fill placed on frozen trench soils shall be removed at no cost to the Owner.
2. Backfilling shall proceed without displacement of the grade and alignment of the pipeline and its appurtenances. Displacement of the pipeline and settlement of backfill shall be considered evidence of improper workmanship or inclusion of unsuitable backfill materials, or both, and will require regrading and realigning the pipeline and removing and recompacting settled material at no cost to the Owner. Puddling and jetting are prohibited.
3. Each lift shall be compacted to density requirements herein before next lift is placed. In trenches outside of roadbed areas, all layers shall be compacted to at least 93 percent of standard density. The use of "HydraHammer" for compacting backfill in trenches is not permitted. Compaction by

hand will be required where necessary.

1.8 TRENCH UNDERCUT EXCAVATION

When material at trench grade is unsuitable, trench bottom shall be undercut to depth, length and width as directed. Undercut volume shall be backfilled to trench grade with subgrade gravel per subsection 02220.1.4.C, compacted with a vibratory compactor, protected and maintained. Work includes any required additional shoring and disposal of excavated material.

1.9 BORROW TRENCH FILL

A. When trench excavation soils fail to meet requirements and when the quantity of approved trench excavation soils is insufficient, approved borrow trench backfill per Subsection 02220.1.4.B shall be used and payment made under Borrow Trench Fill; however, furnishing approved borrow soils to replace approved trench excavation soils that become unsuitable shall be at no additional cost to the Owner. Acceptance of the material from any location shall not be construed as approval of the entire location, but only insofar as the material continues to meet specifications. Material may be rejected by the Architect on visual examination pending tests of representative samples.

B. Work includes Borrow Soils Base to the same depth as, and to replace, soils base removed during trench excavation.

1.10 MEASURE AND PAYMENT FOR BORROW TRENCH FILL

A. Placement and compaction of Borrow Trench Fill will be included in the Lump sum price for the project.

END OF SECTION